The Differences Between the Project Manager and the Systems Engineer

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Welcome

WelKom

Huan Yín

Bienvenido

Bienvenue

Wilkommen

ΚΑΛΟΣ ΟΡΙΣΑΤΕ

Bienvenuto

Välkommen

Tervetuloa

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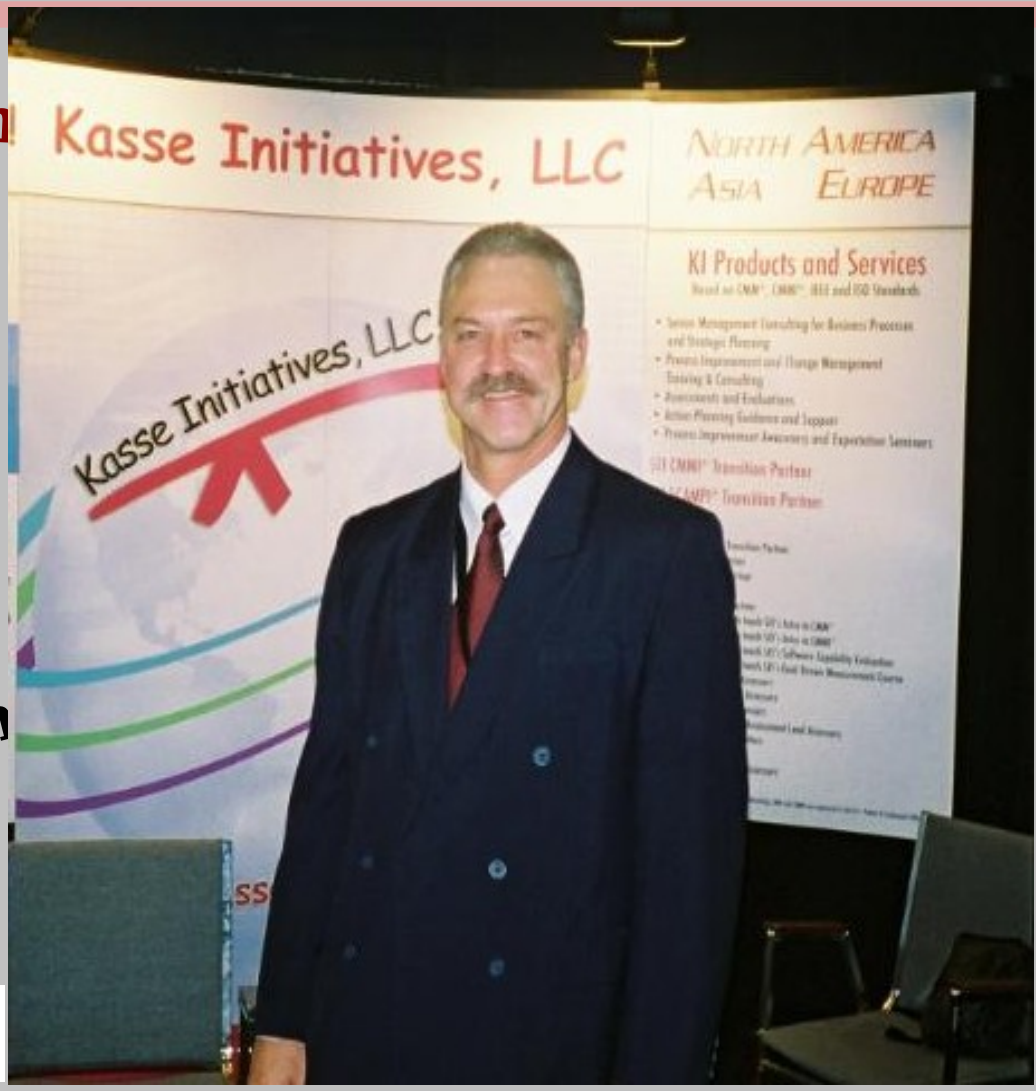

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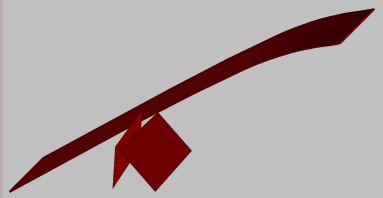

The Systems Engineer

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Systems Engineer

- Need Identification and Customer Linkage
  - Identify the need and the system opportunity by matching need and technical feasibility
  - Be the link between customer needs and system idea and design during the entire process of system creation
- Requirements Engineering
  - Develop a set of system and functional requirements based on customer needs, wants, constraints and interface requirements

Systems Engineer - 2

- Definition of Functionality (Functional Architecture)
  - Divide and allocate the functional requirements into different subfunctions and modes of operation
- Operational Concept
  - Serve as the lead in envisioning the system's operational concept and create the link between the system's requirements and the system's configuration

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Systems Engineer - 3

- Architectural Design
  - Design the system architecture based on the operational concept and operational scenarios
- Analysis, Development, and Testing
  - Collect data from various sources, perform modeling and simulation and analyze them as a basis for decision making
  - Determine if the system is designed to its requirements
  - Test and verify that the system, as built, will meet those requirements as designed

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Systems Engineer - 4

- Trade-Off Analysis
  - Conduct technical and tradeoff analysis leading to the resolution of technical problems at different interface points
  - Conduct risk assessment on the various system elements
- Managing the Interaction
  - Manage the interaction with various engineering groups that perform the subsystem's design while integrating various people and disciplines

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Systems Engineer - 5

- Integration
  - See the entire picture and how each part is contributing to the performance and feasibility of the system as a whole
  - Coordinate the work of the various disciplines involved and manage the interfaces among them so that the result is an overall optimum system
  - Perform the integration of the various subsystems into a total system
- System Performance
  - Evaluate the performance and qualifications of the final system through testing and simulation

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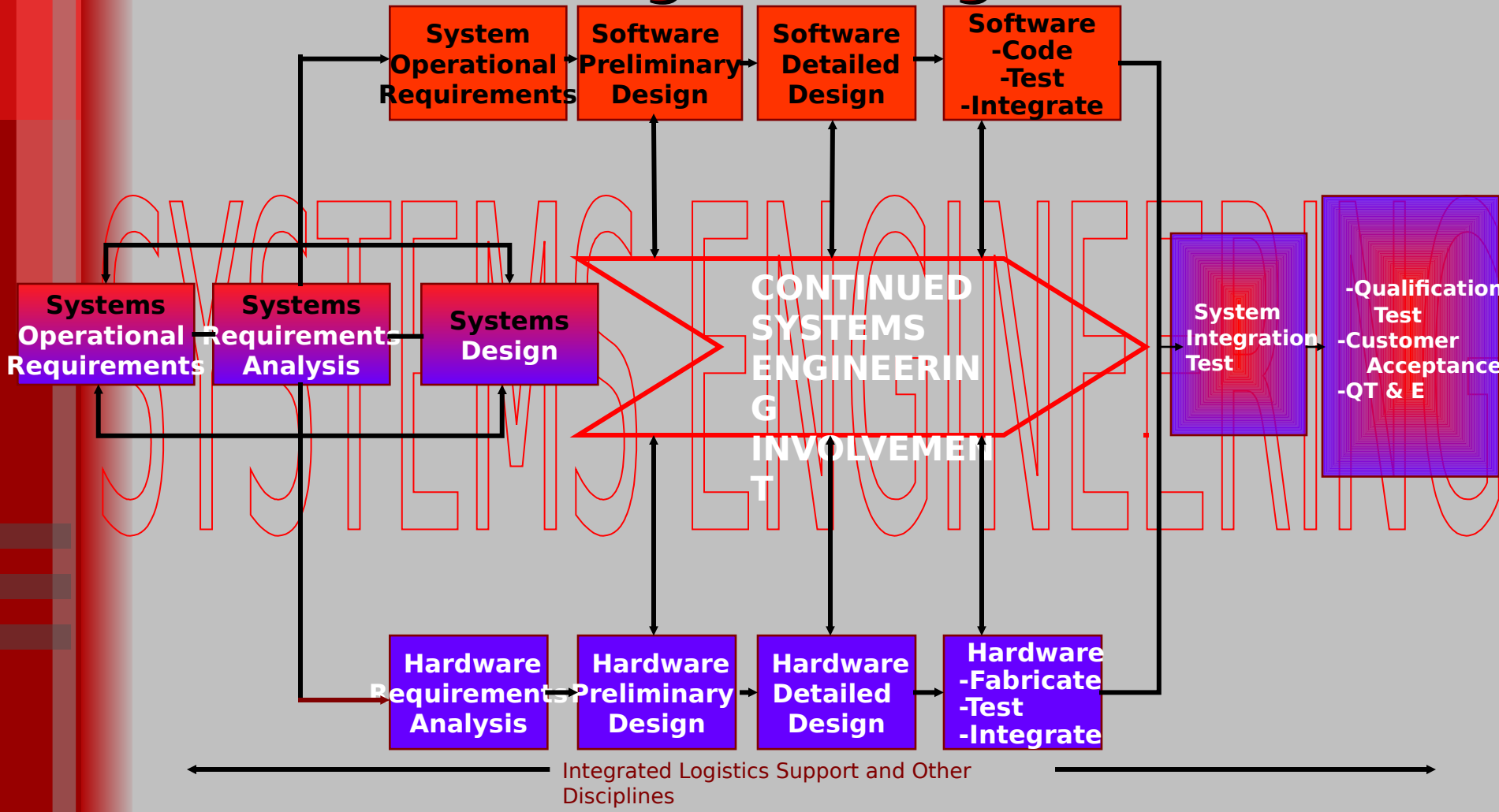
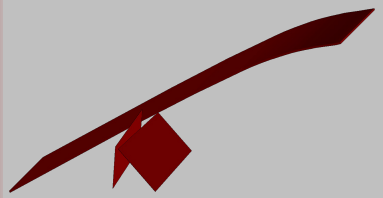
Systems Engineer - 6

- Customer Demonstration
  - Demonstrate the integrated system to customers in their operational environment

Relationship between Systems and Software Engineering





The Project Manager

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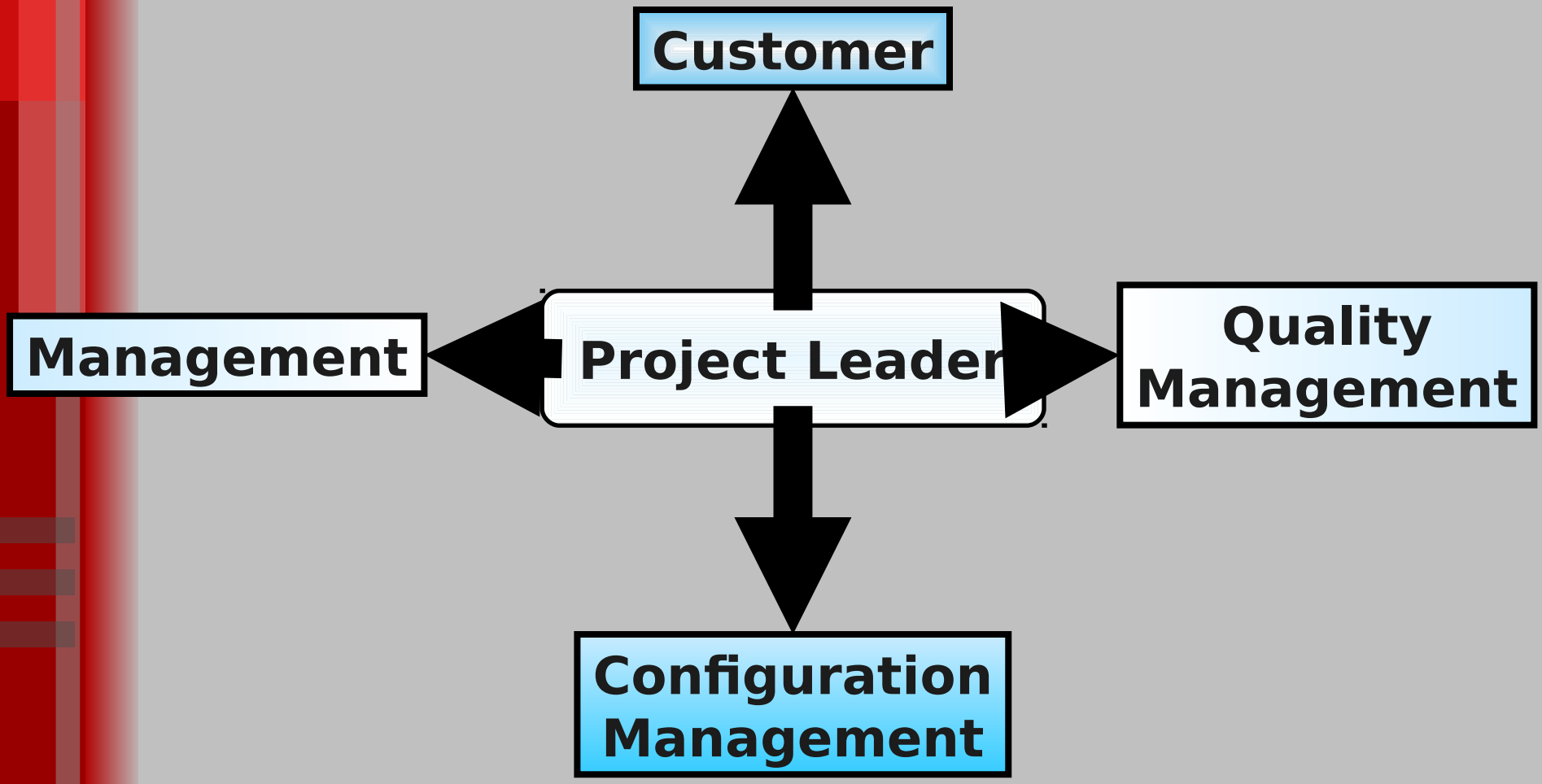
Project Manager

- Head of the Project
  - The Project Manager (Project Leader) is the head of the project
  - The Project Manager has the ultimate responsibility for the planning and control of everything related to the project
- Interface Liaison
  - The Project Manager must interface with the quality manager, the configuration management manager, the integration and test manager, management of other disciplines outside of the project, and the customer

Project Responsibilities



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Project Manager - 2

- Project Control System
  - The Project Manager must establish the feedback loops depicted in the figure shown on the following slide
  - The Project Manager must ensure that the basic controls are in place to guide the project effort toward its objective

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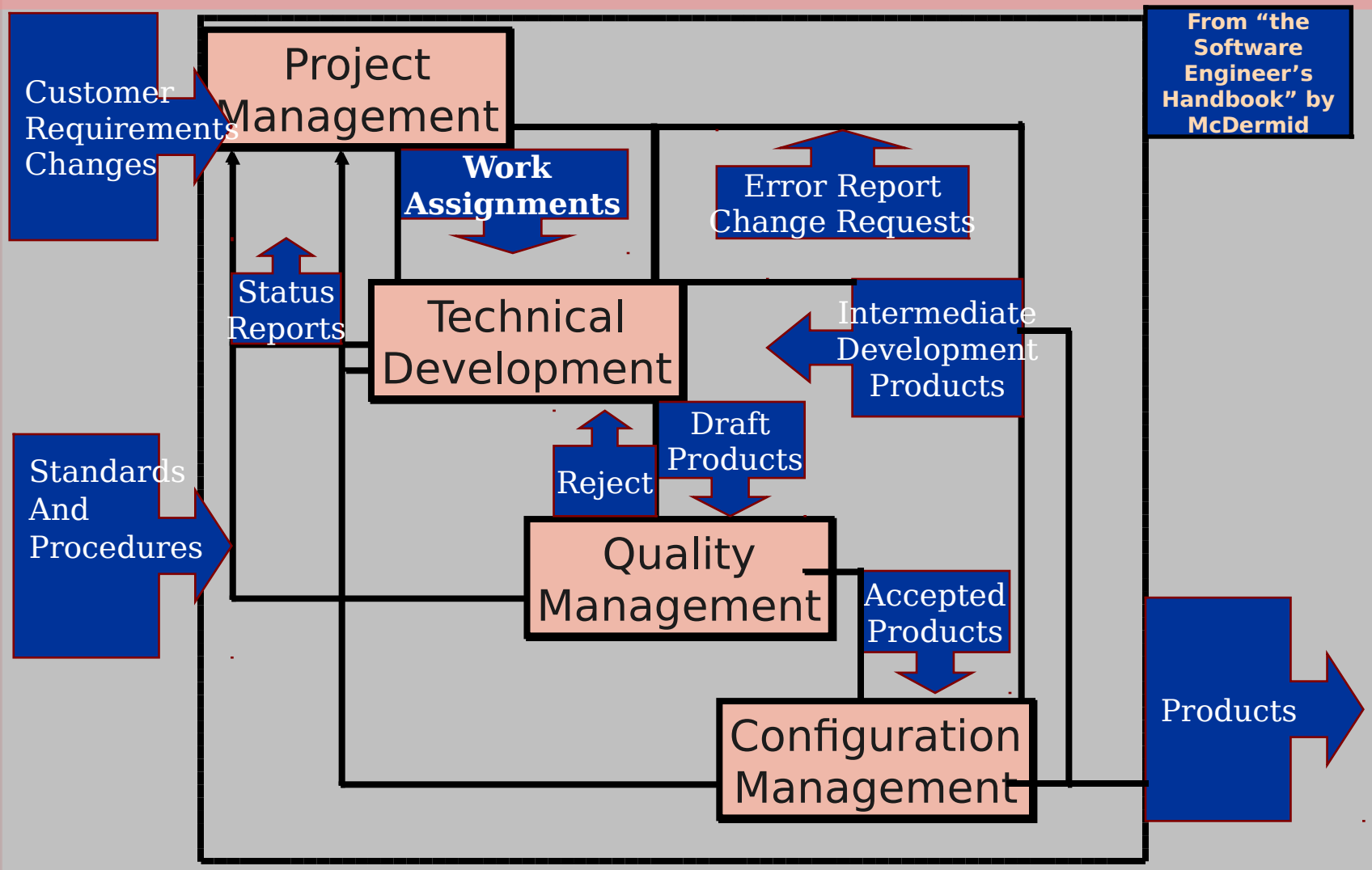
Project Control System



Project Manager - 3

- Provide Direction
  - The Project Manager must provide direction to the project team and be able to answer questions including:
    - For whom do I work?
    - What is expected of me?
    - Why is it expected of me?
    - What tools and facilities are available to me?
    - How do I do what is expected?
    - What training is available to me?

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Project Manager - 4

- Provide Direction - continued
  - What must I produce?
  - When must it be produced?
  - Who do I give it to?
  - How will my product be evaluated?

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Project Manager - 5

- The Project Manager is the DRIVER and as such takes on the responsibility for many diverse tasks including:
  - Lead the project team through the process of creating and executing the project plan
  - Mold the project members into a project team
  - Obtain approvals for the project plan
  - Issue status reports on the progress of the project compared to the plan
  - Respond to requests for changes to the plan

Project Manager - 6

- Facilitate the team process, using trained and experience in interpersonnel skills
- Remove obstacles for the team so they can do the job they are asked to do
- Act as the key interface with the project sponsor
- Act as the key interface with the project customer
- Ensure that the relevant stakeholders are involved throughout the project lifecycle as required
- Call and run regular project meetings
- Issue the final project report
- Capture lessons learned and update the process database

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Summary

- Successful projects have the technical leadership of the Systems Engineer and the management guidance of the Project Manager